

Amendments to the claims:

Please amend claims 1, 12 and 23 as shown in the following listing of claims. This listing of claims will replace all prior versions, and listings, of claims in the application.

- 1 1. (currently amended) A method for recording and replaying property changes
2 of graphic elements in a computer environment comprising:
3 recording graphical and functional information of said graphic
4 elements as properties of said graphic elements are changed, said graphical and
5 functional information including physical positional changes of said graphic
6 elements, physical state changes of said graphic elements and actions caused by said
7 graphic elements when said graphic elements are user-activated, said graphical and
8 functional information further including relationships between some of said graphic
9 elements, said relationships including parent-child relationships between said graphic
10 elements; and
11 replaying at least a portion of recorded changes pertaining to said
12 properties of said graphic elements using said graphical and functional information.
- 1 2. (previously presented) The method of claim 1 wherein said recording includes
2 extracting said graphical and functional information of said graphic elements from
3 broadcast messages and saving said graphical and functional information as recording
4 data.
- 1 3. (previously presented) The method of claim 2 wherein said graphical and
2 functional information corresponds to said property changes as results of user
3 interactions on said graphic elements.

- 1 4. (previously presented) The method of claim 2 wherein said broadcast
2 messages include a message that contains sufficient information to recreate a
3 particular graphic element of said graphic elements from scratch.
- 1 5. (previously presented) The method of claim 4 wherein said message contains
2 property values of said particular graphic element, said property values including at
3 least one of color value, control value and positional value.
- 1 6. (previously presented) The method of claim 2 wherein said replaying includes
2 processing said recording data using predefined time intervals to effectuate said
3 property changes of said graphic elements for replay.
- 1 7. (previously presented) The method of claim 6 wherein said replaying further
2 includes generating an update message that combines some of said property changes
3 for a particular graphic element in response to a user input changing a current replay
4 time to a different replay time.
- 1 8. (previously presented) The method of claim 1 wherein said replaying includes
2 manipulating real operational graphic elements.
- 1 9. (previously presented) The method of claim 1 wherein said recording includes
2 separately recording said graphical and functional information for each of said
3 graphic elements as recording data that can be used to form unique data streams
4 corresponding to different histories of property changes for said graphic elements.
- 1 10. (previously presented) The method of claim 9 wherein said replaying includes
2 processing said recording data to run said unique data streams in parallel to replay
3 said property changes of said graphic elements.

1 11. (previously presented) The method of claim 1 wherein said replaying
2 comprises:
3 temporarily disabling a screen updating process;
4 resetting said computer environment to a recorded state at a particular
5 time using said graphical and functional information of said graphic elements; and
6 enabling said screen updating process to display said recorded state of
7 said computer environment.

1 12. (currently amended) A program storage device readable by a machine,
2 tangibly embodying a program of instructions executable by said machine to perform
3 a method for recording and replaying property changes of graphic elements in a
4 computer environment, said method comprising:

5 recording graphical and functional information of said graphic
6 elements as properties of said graphic elements are changed, said graphical and
7 functional information including physical positional changes of said graphic
8 elements, physical state changes of said graphic elements and actions caused by said
9 graphic elements when said graphic elements are user-activated, said graphical and
10 functional information further including relationships between some of said graphic
11 elements, said relationships including parent-child relationships between said graphic
12 elements; and

13 replaying at least a portion of recorded changes pertaining to said
14 properties of said graphic elements using said graphical and functional information.

1 13. (previously presented) The program storage device of claim 12 wherein said
2 recording includes extracting said graphical and functional information of said
3 graphic elements from broadcast messages and saving said graphical and functional
4 information as recording data.

1 14. (previously presented) The program storage device of claim 13 wherein said
2 graphical and functional information corresponds to said property changes as results
3 of user interactions on said graphic elements.

1 15. (previously presented) The program storage device of claim 13 wherein said
2 broadcast messages include a message that contains sufficient information to recreate
3 a particular graphic element of said graphic elements from scratch.

1 16. (previously presented) The program storage device of claim 15 wherein said
2 message contains property values of said particular graphic element, said property
3 values including at least one of color value, control value and positional value.

1 17. (previously presented) The program storage device of claim 13 wherein said
2 replaying includes processing said recording data using predefined time intervals to
3 effectuate said property changes of said graphic elements for replay.

1 18. (previously presented) The program storage device of claim 17 wherein said
2 replaying further includes generating an update message that combines some of said
3 property changes for a particular graphic element in response to a user input changing
4 a current replay time to a different replay time.

1 19. (previously presented) The program storage device of claim 12 wherein said
2 replaying includes manipulating real operational graphic elements.

1 20. (previously presented) The program storage device of claim 12 wherein said
2 recording includes separately recording said graphical and functional information for
3 each of said graphic elements as recording data that can be used to form unique data
4 streams corresponding to different histories of said property changes for said graphic
5 elements.

1 21. (previously presented) The program storage device of claim 20 wherein said
2 replaying includes processing said recording data to run said unique data streams in
3 parallel to replay said property changes of said graphic elements.

1 22. (previously presented) The program storage device of claim 12 wherein said
2 replaying comprises:
3 temporarily disabling a screen updating process;
4 resetting said computer environment to a recorded state at a particular
5 time using said graphical and functional information of said graphic elements; and
6 enabling said screen updating process to display said recorded state of
7 said computer environment.

1 23. (currently amended) A method for recording and replaying property changes
2 of graphic elements in a computer environment comprising:
3 separately recording said property changes of each of said graphic
4 elements with respect to time to form separate historical chains of property changes
5 for said graphic elements, said property changes including physical positional
6 changes of said graphic elements, physical state changes of said graphic elements and
7 actions caused by said graphic elements when said graphic elements are user-
8 activated, said property changes further including relationship changes between some
9 of said graphic elements, said relationships including parent-child relationships
10 between said graphic elements; and
11 replaying said property changes of said graphic elements by
12 manipulating said graphic elements using said separate historical chains of property
13 changes, said graphic elements that are manipulated being real operational graphic
14 elements.

1 24. (previously presented) The method of claim 23 wherein said separately
2 recording includes extracting property change information of said graphic elements
3 from broadcast messages and saving said property change information as recording
4 data.

1 25. (previously presented) The method of claim 24 wherein said replaying
2 includes processing said recording data using predefined time intervals to effectuate
3 said property changes of said graphic elements for replay.

1 26. (previously presented) The method of claim 25 wherein said replaying further
2 includes generating an update message that combines some of said property changes
3 stored in said recording data in response to a user input changing a current replay
4 time to a different replay time.

1 27. (previously presented) The method of claim 23 wherein said replaying
2 includes processing unique data streams in parallel to replay said property changes of
3 said graphic elements, said unique data streams corresponding to said separate
4 historical chains of property changes.

1 28. (previously presented) The method of claim 23 wherein said replaying
2 comprises:
3 temporarily disabling a screen updating process;
4 resetting said computer environment to a recorded state at a particular
5 time using recorded property changes of said graphic elements; and
6 enabling said screen updating process to display said recorded state of
7 said computer environment.